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UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS  
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCrory, Chief

MONTHLY NEWS LETTER

WASHINGTON, D.C., MAY 20, 1931.

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: FOR THE PURPOSES OF THE WASHINGTON RECORDS IT IS:  
: REQUESTED THAT EACH FIELD OFFICE SUBMIT, THROUGH USUAL :  
: CHANNELS, A SCHEDULE OF THE OFFICE OR WORKING HOURS IN :  
: EFFECT ON SATURDAYS AND ON OTHER WEEK DAYS. :  
:.....

.....  
: EMPLOYEES TO WHOM GOVERNMENT-OWNED VEHICLES ARE :  
: ASSIGNED SHOULD SATISFY THEMSELVES THAT THEIR CARS AND :  
: TRUCKS ARE AT ALL TIMES IN SAFE OPERATING CONDITION . :  
: THIS WOULD APPLY IN PARTICULAR TO BRAKES, STEERING GEARS,  
: HEAD LIGHTS, AND TIRES. INSPECTION SHOULD BE MADE WITH:  
: SUFFICIENT FREQUENCY TO INSURE THAT THE VEHICLE IS IN :  
: SAFE CONDITION. ACCIDENTS TRACEABLE TO CARELESS MAIN- :  
: TENANCE WILL BE DIFFICULT TO EXPLAIN. :  
:.....

GEO. R. BOYD VISITED CONNECTICUT MAY 18 AND 19 FOR THE PURPOSE OF INSPECTING CERTAIN AREAS OF BRUSH LAND ON WHICH THE GROWTH WAS POISONED LAST YEAR, IN ORDER TO NOTE THE EFFECTIVENESS OF THE OPERATION. MR. BOYD ON APRIL 27, DELIVERED A RADIO TALK AT STATION W. R. C. WASHINGTON, IN CONNECTION WITH THE DEPARTMENT'S FARM HOME HOUR, ON THE SUBJECT - "LAND CLEARING."

L. A. JONES HAS RETURNED FROM A VISIT TO THE STATES OF WISCONSIN, IOWA, MISSOURI, KANSAS, OKLAHOMA, TEXAS AND NORTH CAROLINA, IN CONNECTION WITH THE SOIL EROSION STUDIES. THE VISIT TO WISCONSIN WAS IN CONNECTION WITH THE SELECTION OF THE NINTH EROSION CONTROL EXPERIMENT FARM. DEFINITE DECISION AS TO THE LOCATION OF THIS FARM WILL BE MADE SHORTLY.

G. A. CUMINGS HAS RETURNED FROM A TRIP THROUGH THE SOUTH DURING WHICH HE SUPERVISED THE FERTILIZER PLACEMENT EXPERIMENTS ON COTTON AT 12 DIFFERENT LOCATIONS IN NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, MISSISSIPPI AND LOUISIANA. A. L. SHARP HAS BEEN LOOKING AFTER SIMILAR WORK IN TEXAS, ARKANSAS AND OKLAHOMA. THESE FERTILIZER PLACEMENT EXPERIMENTS ARE BEING CONDUCTED IN COOPERATION WITH THE RESPECTIVE STATE EXPERIMENT STATIONS, THE NATIONAL FERTILIZER ASSOCIATION AND THE JOINT COMMITTEE ON FERTILIZER APPLICATION. IN SOUTH CAROLINA THE SOIL FERTILITY AND FERTILIZER AND FIXED NITROGEN DIVISIONS OF THE BUREAU OF CHEMISTRY AND SOILS, ARE ALSO COOPERATING. TWO SPECIAL MACHINES AND ATTACHMENTS HAVE BEEN BUILT FOR THIS WORK





DESIGNED TO OBTAIN ACCURATE DELIVERY AND PLACEMENT OF THE FERTILIZER. TRUCKS WERE USED TO TRANSPORT THESE MACHINES FROM ONE LOCATION TO ANOTHER. A SPECIAL MACHINE IS NOW BEING BUILT FOR SIMILAR FERTILIZER PLACEMENT STUDIES ON CANNING CROPS WHICH WILL BE STARTED AT GENEVA, N.Y. ABOUT JULY 1.

W. M. HURST VISITED THE IBERIA LIVESTOCK FARM AT JEANERETTE, LA. WHERE E. D. GORDON IS IN IMMEDIATE CHARGE OF HAY DRYING EXPERIMENTS. THESE EXPERIMENTS INCLUDE NOT ONLY THE OPERATION AND STUDY OF THE PLANT INSTALLED BY THIS DIVISION BUT ALSO FIELD STUDIES WHICH WILL GIVE COMPLETE OPERATING DATA SUCH AS POWER, FUEL, AND LABOR REQUIREMENTS.

MR. HURST NEXT WENT TO BRYAN, TEXAS, WHERE HE INSPECTED A SPECIAL TYPE OF HAY DRYING PLANT TO SEE IF THE CONDITIONS FAVORED MAKING STUDIES THERE ALSO. ON HIS RETURN HE STOPPED IN ST. LOUIS TO INSPECT THE PLANT OF THE RALSTON-PURINA COMPANY WHICH HAD BEEN DOING CONSIDERABLE RESEARCH WORK ON THE FEEDING OF ARTIFICIALLY DRIED PRODUCTS INCLUDING ARTIFICIALLY DRIED HAY.

D. G. MILLER RECENTLY SUBMITTED A REPORT AND SPECIFICATIONS FOR A PROPOSED WATER SYSTEM FOR SULLY'S HILL GAME PRESERVE, FORT TOTTEN, N. D., A PROJECT OF THE BUREAU OF BIOLOGICAL SURVEY.

D. L. YARNELL HAS SUBMITTED A REPORT ON AN EXTENSIVE SERIES OF EXPERIMENTS FOR THE PURPOSE OF DETERMINING THE CHARACTERISTICS OF FLOW THROUGH PILE TRETTLES. IT IS EXPECTED THAT THIS REPORT WILL BE SUBMITTED FOR PUBLICATION IN "PUBLIC ROADS."

J. T. BOWEN IS PREPARING PLANS FOR REFRIGERATION PLANTS FOR LABORATORIES OF THE BUREAU OF ENTOMOLOGY AT WALLA WALLA, WASHINGTON, TWIN FALLS, IDAHO AND MADISON, WISC. HE IS MAKING A STUDY OF THE ELECTRICAL WIRING AT THE ARLINGTON EXPERIMENT FARM WITH THE VIEW TO CHANGING THE CURRENT FROM 25 TO 60 CYCLES.

J. C. MARR WENT TO BURNS, OREGON, APRIL 4, AND IS ASSISTING L. T. JESSUP IN PROCURING INFORMATION FOR THE BLITZEN RIVER ADJUDICATION SUIT. HIS ACTIVITIES HAVE CONSISTED OF RUNNING ABOUT 75 MILES OF PRIMARY LEVEL LINES AND APPROXIMATELY 30 MILES OF PROFILE LEVEL LINES IN THAT PORTION OF THE BLITZEN VALLEY WHERE THE APPROPRIATION OF WATER IS TO BE CONTESTED. MISCELLANEOUS INFORMATION IS ALSO BEING COMPILED REGARDING THE PROBABLE IRRIGATION HISTORY OF THE VALLEY, AGE OF SAGEBRUSH GROWTH, PRESENCE AND CAPACITY OF OLD CANALS, AND LOCATION OF SLOUGHS.

A. A. YOUNG IS NOW AT BONNERS FERRY, IDAHO, ASSISTING MR. JESSUP ON THE KOOTENAI VALLEY INVESTIGATION. IN PREPARATION FOR SOIL MOISTURE EXPERIMENTS, SEVERAL TANKS HAVE BEEN FILLED WITH UNDISTURBED SOIL FROM SELECTED LOCATIONS AND MOVED BY TRUCK TO A CENTRAL STATION FOR THE TANK WORK, WHERE OBSERVATIONS ON THE USE OF WATER BY CROPS WILL BE MADE. A LARGE PROGRAM HAS BEEN OUTLINED TO STUDY THE RELATION OF CROP PRODUCTION TO GROUND WATER CONDITIONS.





R. L. PARSHALL MADE AN INSPECTION TRIP TO THE FORT LEWIS SCHOOL NEAR DURANGO, COLO., FOR THE PURPOSE OF PROPOSING A PRACTICAL PLANT FOR THE IRRIGATION OF THE CAMPUS.

MR. PARSHALL REPORTS THAT THE SOUTHERN COLORADO POWER CO., IS CONSIDERING THE INSTALLATION OF A VORTEX TUBE AND RIFFLE DEFLECTOR SAND TRAP ON THE INTAKE TO THEIR POWER PLANT AT CANYON CITY. THE PLANT IS A STEAM INSTALLATION, AND FOR THE CONDENSERS A LARGE AMOUNT OF WATER IS NEEDED FOR COOLING. THEIR EXPERIENCE HAS BEEN THAT THE SAND ENTERING INTO THEIR CIRCULATING SYSTEM HAS BEEN VERY TROUBLESOME. MR. PARSHALL EXPECTS SOON TO INSPECT THE PLANT, WITH A VIEW TO SUGGESTING IMPROVEMENTS.

COLIN A. TAYLOR IS MAKING A STUDY AT DEVIL CANYON IN SOUTHERN CALIFORNIA, DESIGNED TO SHOW THE USE OF WATER BY THE CANYON BOTTOM VEGETATION. BED ROCK CONTROLS ARE TO BE ESTABLISHED ALONG THE STREAM COURSE SO THAT THE EVAPORATION-TRANSPIRATION LOSSES CAN BE DETERMINED FOR THE CONTROLLED SECTIONS. EXPLORATIONS FOR BED ROCK ARE NOW UNDER WAY AT TWO SITES NEAR THE LOWER END OF THE CANYON. UPPER CONTROLS HAVE ALREADY BEEN ESTABLISHED IN THE TWO BRANCHES OF THE CANYON AT THE FALLS. SHORT TUNNELS WERE DRIVEN INTO THE ROCK UNDER THE FALLS AND FLUMES SET TO CATCH THE WATER AS IT DROPS OVER THE FALLS. THE WATER IS THEN LED TO MEASURING BOXES WITH V-NOTCH WEIRS AND RECORDERS. NEAR THE MOUTH OF THE CANYON, A THREE-INCH FLUME AND RECORDER ARE SET TO MEASURE THE SURFACE FLOW UNTIL THE WATER-TIGHT DAMS ARE BUILT. IN THIS WAY RECORDS WILL BE HAD THROUGH THE COOL CLOUDY SPRING DAYS BEFORE THE TRANSPIRATION RATE BECOMES HIGH.

HARRY G. NICKLE HAS BEEN APPOINTED JUNIOR HYDRAULIC ENGINEER AND ASSIGNED TO DUTY FOR THE PRESENT IN SOUTHERN CALIFORNIA.

L. M. WINSOR REPORTS AS FOLLOWS REGARDING AN INSPECTION HE MADE OF THE BEAR RIVER MIGRATORY BIRD REFUGE PROJECT IN UTAH. THE STRUCTURES ON THIS PROJECT WERE SEVERELY TESTED BY A TERRIFIC STORM ON APRIL 22 AND 23. A WIND FROM THE EAST SWEEPED THE REGION OF BEAR RIVER BAY FOR A PERIOD OF OVER 36 HOURS, REACHING A MAXIMUM VELOCITY OF OVER 70 MILES PER HOUR. CONSIDERABLE DAMAGE WAS DONE TO BEAR RIVER CLUB DIKES ON THE RIVER, AND THEY OPENED 600 FEET OF SPILLWAY WITH A FULL HEAD BEHIND THE GATES, DISCHARGING THEIR BURDEN INTO UNIT 1 OF BEAR BAY PROJECT. THIS RAISED THE WATER IN NORTH BAY FROM ELEVATION 4,203 TO SLIGHTLY UNDER 4,205. THE DIKES WITHSTOOD THE TERRIFIC WAVE ACTION REMARKABLY WELL. THERE WAS A CONSIDERABLE AMOUNT OF CUTTING AT THE BEACH LINE ACROSS THE DEEP PORTION OF NORTH BAY WHERE THE EAST SLOPE OF THE DIKE WAS LEFT VERY NEARLY PERPENDICULAR FROM HIGH WATER LINE TO THE TOP OF THE DIKE; BUT WHERE THE SLOPE WAS LEFT MORE NEARLY ACCORDING TO SPECIFICATIONS, THE BEACH LINE IS ONLY A MARK. THE MOST SERIOUS DAMAGE WAS DONE AT SPILLWAY STRUCTURES WHERE WING WALLS STOOD IN BOLD RELIEF ABOVE THE EMBANKMENT. UNDER THESE CONDITIONS WATER WAS SPLASHED COMPLETELY OVER THE DIKES AND THE BACK WASH CARRIED AWAY A CONSIDERABLE AMOUNT OF LOOSE DIRT FROM BEHIND WING WALLS.

WELLS A. HUTCHINS LEFT BERKELEY MAY 4 FOR OREGON AND OTHER NORTH-WESTERN STATES ON A STUDY OF POLICIES GOVERNING THE OWNERSHIP OF RETURN WATERS FROM IRRIGATION.







W. W. McLAUGHLIN LEFT BERKELEY APRIL 13 FOR WASHINGTON, D. C. VISITING EN ROUTE EAST THE COOPERATIVE IRRIGATION WORK IN SOUTHERN CALIFORNIA, ARIZONA, NEW MEXICO AND TEXAS. WHILE IN WASHINGTON PLANS AND POLICIES FOR THE NEW BUREAU OF AGRICULTURAL ENGINEERING WERE DISCUSSED. UPON THE RETURN TRIP WEST THE IRRIGATION WORK IN COLORADO AND UTAH WAS INSPECTED.

C. E. RAMSER HAS SUBMITTED THE FOLLOWING ITEMS RELATING TO THE SOIL EROSION EXPERIMENT FARMS:

H. S. RIESBOL REPORTS THAT RAINS OF APRIL 14 AND 20 CAUSED APPRECIABLE RUN-OFF AND EROSION FROM ALL AREAS WHERE MEASURING FLUMES AND SILT SAMPLERS HAVE BEEN INSTALLED. ONLY SMALL AMOUNTS OF SILT WERE CAUGHT IN THE SILT BOXES INSTALLED AT THE ENDS OF TERRACES AS COMPARED WITH THAT FROM AN UNTERRACED GULLIED AREA OF 4 ACRES. THE SILT BOX ON THIS AREA WHICH IS 2 FEET DEEP, 8 FEET WIDE AND 20 FEET LONG WAS FILLED 2 FEET DEEP DURING BOTH OF THESE RAINS. AT THE TIME OF THE FIRST RAIN THE GULLIES ON THIS AREA WERE FILLED WITH WINDBLOWN SOIL AND THE GROUND WAS COVERED WITH A CROP OF RYE. AT THE TIME OF THE SECOND RAIN THE RYE CROP HAD JUST BEEN PLOWED UNDER. CONDITIONS WERE FAVORABLE FOR SEVERE EROSION ON THIS WATERSHED DURING BOTH RAINS.

E. E. STEWART REPORTS A VISIT ON APRIL 28 TO THE BLACKLAND SOIL EROSION EXPERIMENT STATION AT TEMPLE, TEX., BY W. A. JUMP, ASSISTANT DIRECTOR OF PERSONNEL AND BUSINESS ADMINISTRATION OF THE DEPARTMENT OF AGRICULTURE AND G. F. ALLEN, EXECUTIVE ASSISTANT TO THE DIRECTOR OF THE BUDGET.

DR. KINITKAR OF THE COLLEGE OF AGRICULTURE OF BOMBAY, INDIA, SPENT TEN DAYS VISITING THE FORT HAYS EXPERIMENT STATION. R. R. DRAKE REPORTS THAT HE WAS PARTICULARLY INTERESTED IN THE EROSION AND SOIL CONSERVATION EXPERIMENTS BEING CONDUCTED AT THAT STATION.

A DELEGATION OF 25 PEOPLE HEADED BY THE HOME DEMONSTRATION AGENT VISITED THE EAST TEXAS SOIL EROSION EXPERIMENT FARM NEAR TYLER ON MAY 2. R. W. BAIRD REPORTS THIS TO BE THE FIRST LARGE DELEGATION OF VISITORS SINCE THE COMPLETION OF THE TERRACING WORK ON THE FARM.

P. C. MCGREW REPORTS THAT DIFFICULTY HAS BEEN ENCOUNTERED IN CROSSING TERRACES WITH THE GRAIN DRILL ON THE STEEP SLOPES ON THE PULLMAN FARM. IT WAS FOUND NECESSARY TO SUBSTITUTE RUBBER TUBES FOR THE FLEXIBLE STEEL TUBES ON THE DRILL FOR SATISFACTORY OPERATION.

R. B. GRAY IS VISITING TWELVE MANUFACTURERS OF FARM TRACTORS AND THE TRACTOR TESTING LABORATORY OF THE UNIVERSITY OF NEBRASKA AS PART OF THE INVESTIGATION BEING CARRIED ON BY THE A.S.A.E. COMMITTEE ON FUEL AND LUBRICANTS, OF WHICH HE IS CHAIRMAN. HE IS ACCOMPANIED BY TWO OTHER MEMBERS OF THE COMMITTEE.

I. F. REED ASSISTED IN DEMONSTRATIONS OF SPECIAL SIDE-DELIVERY RAKES FOR CORN BORER CONTROL BEFORE GROUPS OF INDIANA COUNTY AGENTS AT AUBURN AND LAFAYETTE, INDIANA, DURING THE LATTER PART OF APRIL.

O. K. HEDDEN COMPLETED THE SEASON'S WORK ON USE OF THE MOBILE FIELD BURNER FOR APHIS CONTROL IN THE ANTELOPE VALLEY OF CALIFORNIA, AND IS NOW CARRYING OUT EXPERIMENTS ON USE OF THE BURNER FOR CONTROL OF RICE STEM ROT AT THE RICE BRANCH, ARKANSAS EXPERIMENT STATION.

L. G. SCHOENLEBER HAS APPLIED FOR A PUBLIC PATENT ON A DOWN-STALK GATHERING ATTACHMENT FOR CORN.





V. D. YOUNG HAS BEEN TRANSFERRED FROM TOLEDO, OHIO, TO SOUTH NORWALK, CONN., WHERE HE WILL ASSIST R. M. MERRILL ON CORN BORER CONTROL PROBLEMS.

A. H. GLAVES AND I. F. REED HAVE BEEN MAKING TESTS OF A TWO-BOTTOM 21-INCH PLOW BUILT AT TOLEDO FOR CORN BORER CONTROL. DRAFT PER SQUARE INCH OF FURROW SLICE IS NO HIGHER THAN WHEN SMALLER PLOWS ARE USED.

H. C. MAUER HAS BEEN TRANSFERRED FROM SOUTH NORWALK, CONN., TO TOLEDO, OHIO, FOR WORK ON CORN BORER CONTROL MACHINERY.

MRS. WILKS REPORTS HAVING RECEIVED THE FOLLOWING BOOKS IN THE LIBRARY  
INDIA - BOMBAY PUBLIC WORKS DEPARTMENT. TECHNICAL PAPERS:

No. 16, INGLIS, C.C. NOTE ON IRRIGATION ON THE BLOCK SYSTEM IN THE DECCAN CANAL TRACTS. 1927. 19 p.

No. 17, INGLIS, C.C. NOTE ON THE EFFLUENT FARM NEAR POONA (1918-19 TO 1925-26) 1927. 41 p.

No. 18, ROOSE, F.O.J. NOTE ON THE USE OF HYDRO-ELECTRIC POWER BY SMALL INDUSTRIES IN SWITZERLAND, NORWAY AND SWEDEN. 1928. 52 p.

No. 19, INGLIS, C.C. NOTE ON THE DESIGN OF DISTRIBUTARIES AND THEIR OUTLETS IN THE BOMBAY DECCAN. 1928. 13 p.

No. 23, INGLIS, C. C. NOTE ON STANDING WAVE PIPE OUTLETS. 1928. 11 p.

No. 25, INGLIS, C. C. MODULING OPERATIONS ON DISTRIBUTARY No. 8, NIRA LEFT BANK CANAL, AND APPLICATION OF THE RESULTS TO OTHER DISTRIBUTARIES. 1928. 24 p.

No. 26, HAWES, C. G. REPORT ON TESTS MADE ON A MODEL OF THE GROUP OF REGULATORS AT ODEROLAL AT MILE 169 APPROXIMATELY OF THE RAHRI MAIN CANAL, SIND. 1928. 24 p.

KEEN, B. A. PHYSICAL PROPERTIES OF THE SOIL. LONDON, LONGMANS, GREEN AND Co., 1931. 280 P. CRITICAL SURVEY OF KNOWLEDGE OF PHYSICAL PROPERTIES OF SOIL. TAKES UP DISTRIBUTION AND MOVEMENT OF WATER IN SOIL, SOIL PROPERTIES AT LOW MOISTURE CONTENTS, PROPERTIES OF SOIL AND CLAY SUSPENSIONS, SOIL CONSTANTS AND EQUILIBRIUM POINTS, PHYSICAL PROPERTIES OF SOIL UNDER FIELD CONDITIONS, SOIL TEMPERATURE AND SOIL ATMOSPHERE.

NORRIS, E. B. AND THERKELSEN, ERIC. HEAT POWER. 1ST ED. N.Y. MCGRAW-HILL BOOK COMPANY, INC., 1930. 376 p. INTENDED FOR AN INTRODUCTORY COURSE IN THE PRINCIPLES OF HEAT POWER FOR STUDENTS OF ENGINEERING. EMPHASIS ON FUNDAMENTAL PRINCIPLES RATHER THAN CURRENT PRACTICE OR MECHANICAL DETAILS. DISCUSSES INTERNAL COMBUSTION ENGINES, TURBINES, STEAM ENGINES AND BOILERS.

PIRSSON, L. V. TEXTBOOK OF GEOLOGY, PT. I: PHYSICAL GEOLOGY. 3D ED. REV. N.Y. JOHN WILEY AND SONS, INC., 1929. 488 p.

STEWART, R. M. AND GETMAN, A.K. TEACHING AGRICULTURAL LOCATIONS. A MANUAL FOR TEACHERS IN PREPARATION AND IN SERVICE. 2D EDITION. N.Y. JOHN WILEY AND SONS, INC., 1930. 377 p.

WALKER, J. H. AND CROCKER, SABIN. PIPING HANDBOOK. 1ST ED. N.Y. MCGRAW-HILL BOOK COMPANY INC., 1930. 763 p.

WILCOCKS, WILLIAM. LECTURES ON THE ANCIENT SYSTEM OF IRRIGATION IN BENGAL, AND ITS APPLICATION TO MODERN PROBLEMS. CALCUTTA, 1930. 128 p.

